

WHAT IS CLAIMED IS:

1. A liquid crystal display comprising:

a display panel having a plurality of pixels;

a scanning unit connected to the display panel by a plurality of
5 scanning lines so that the scanning unit controls the pixels of the display
panel via the scanning lines;

a polarity arrangement timing generator (PATG) for generating a
plurality of polarity arrangement control (PAC) signals; and

a polarity arrangement programmable data driver (PAPDD)
10 connected to a plurality of data lines and receiving the polarity arrangement
control signal so as to output a set of aperiodic polarity order to the data
lines so that the polarities of the pixels are distributed aperiodically.

2. The liquid crystal display of claim 1, wherein the polarity
arrangement programmable data driver further includes a plurality of
15 sampling/hold registers for latching digital signals sent to the pixels of the
display panel.

3. The liquid crystal display of claim 1, wherein the polarity
arrangement programmable data driver further includes a plurality of
sampling/hold registers, a plurality of digital/analog (D/A) converters, a
20 plurality of operational amplifiers and a plurality of polarity selectors, the
output of the sampling/hold registers being connected to the input of the
D/A converters, the output of the D/A converters being connected to the
input of the operational amplifiers so that the polarity selectors select the
output signals from the operational amplifiers according to the polarity
25 arrangement control signals, and then output the selected signal to the

pixels .

4. The liquid crystal display of claim 3, wherein polarities of the signals from the operational amplifiers are either positive or negative.

5 5. The liquid crystal display of claim 1, wherein the polarity arrangement programmable data driver further includes a plurality of sampling/hold registers, a plurality of D/A converters, a plurality of polarity selectors and a plurality of operational amplifiers, the output of the sampling/hold registers being connected to the input of the D/A converters and the output of the D/A converters being connected to the input of the polarity selectors so that the polarity selectors select the output signals from the D/A converters according to the polarity arrangement control signals, and then output the selected signal to the data lines through the operational amplifiers.

15 6. The liquid crystal display of claim 1, wherein, when the display panel displays a plurality frames, the polarity arrangement timing generator and the polarity arrangement programmable data driver control the polarity of the half of the frames opposite to the polarity of the other half of the frames.

20 7. The liquid crystal display of claim 1, wherein the display panel is a liquid crystal display panel.

8. A liquid crystal display driving method for controlling the polarity of a display panel that has a plurality of pixels, the method comprising:

 a timing generation step for generating a plurality of polarity arrangement control (PAC) signals;

25 a selecting step for outputting a set of aperiodic polarity order based

on the polarity arrangement control signals; and

5 a polarity controlling step for sending the set of aperiodic polarity order to the display panel and thereby controlling polarities of the pixels of the display panel such that an aperiodic polarity distribution is exhibited, wherein, when the display panel displays a plurality of frames, a pre-determined number of picture frames are displayed in a way that one half of the frames have pixels with polarities exactly opposite to those of the pixels in the other half.

10 9. The liquid crystal display driving method of claim 8, wherein the display panel is a liquid crystal display panel.